

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-10 (Canceled).

Claim 11 (Currently amended): A process for preparing propylene oxide, which comprises at least the steps (iii) and (iv)

(iii) separating off propylene oxide from a mixture (M1) comprising propylene oxide and at least one solvent by distillation in a distillation column, giving a bottom stream and a vapor stream consisting essentially of propylene oxide, wherein the distillation is carried out at a pressure of less than 1.013 bar;

(iv) compressing the vapor stream obtained in (iii) by means of at least one compressor to give a compressed vapor,

wherein the solvent content of the vapor stream in (iii) is not more than 500 ppm.

Claim 12 (Previously presented): A process as claimed in claim 11, wherein the at least one solvent is methanol.

Claim 13 (Previously presented): A process as claimed in claim 11, wherein the distillation column used for the separation by distillation in (iii) is operated at a pressure in the range of from 450 to 750 mbar.

Claim 14 (Previously presented): A process as claimed in claim 11, wherein the compression of the vapor is carried out using a turbocompressor.

Claim 15 (Previously presented): A process as claimed in claim 11, wherein the vapor is compressed to a pressure in the range of from 2 to 5 bar in (iv) and the compressed vapor has a temperature which is in a range of from 8 to 20°C above the temperature of the medium vaporizing in the distillation column in (iii).

Claim 16 (Previously presented): A process as claimed in claim 11, which additionally comprises the step (v)

(v) condensing the vapor obtained in (iv) and returning at least part of the heat of condensation to at least one vaporizer used in the distillation column employed in (iii).

Claim 17 (Previously presented): A process as claimed in claim 16, which additionally comprises the step (vi)

(vi) cooling at least part of the condensate obtained in (v) to a temperature in the range of from 10 to 30°C in at least one heat exchanger and returning this part of the cooled condensate as reflux to the distillation column used in (iii).

Claim 18 (Currently amended): A process as claimed in claim 17, wherein ~~propene~~ compressed in the at least one heat exchanger used in (vi) is vaporized completely with depressurization further comprising:

depressurizing a compressed propene stream into a compartment of the heat exchanger used in (vi), and

vaporizing the depressurized compressed propene completely;

wherein a resulting refrigeration power is transferred to the condensate present in another compartment of the heat exchanger.

Claim 19 (Previously presented): A process as claimed in claim 11, wherein the energy stored in the bottom stream obtained in (iii) is at least partly used for heating the mixture (M1) before it is fractionally distilled in (iii).

Claim 20 (Previously presented): A process as claimed in claim 11, which additionally comprises the steps (i) and (ii)

(i) reacting propene with hydrogen peroxide in the presence of a titanium silicalite catalyst and methanol as solvent to give a mixture (M0) comprising propylene oxide, unreacted propene and methanol;

(ii) separating off the unreacted propene from the mixture (M0) to give a mixture (M1) comprising propylene oxide and methanol.

Claim 21 (Currently amended): A process for preparing propylene oxide, which comprises at least the steps (iii) and (iv)

(iii) separating off propylene oxide from a mixture (M1) comprising propylene oxide and at least one solvent by distillation in a distillation column, giving a bottom stream and a vapor stream consisting essentially of propylene oxide, wherein the distillation is carried out at a pressure of less than 1.013 bar;

(iv) compressing the vapor stream obtained in (iii) by means of at least one compressor to give a compressed vapor,

wherein the at least one solvent is methanol, and wherein the solvent content of the vapor stream in (iii) is not more than 500 ppm.

Claim 22 (Previously presented): A process as claimed in claim 21, wherein the distillation column used for the separation by distillation in (iii) is operated at a pressure in the range of from 450 to 750 mbar.

Claim 23 (Previously presented): A process as claimed in claim 21, wherein the compression of the vapor is carried out using a turbocompressor.

Claim 24 (Previously presented): A process as claimed in claim 21, wherein the vapor is compressed to a pressure in the range of from 2 to 5 bar in (iv) and the compressed vapor has a temperature which is in a range of from 8 to 20°C above the temperature of the medium vaporizing in the distillation column in (iii).

Claim 25 (Previously presented): A process as claimed in claim 21, which additionally comprises the step (v)

(v)     condensing the vapor obtained in (iv) and returning at least part of the heat of condensation to at least one vaporizer used in the distillation column employed in (iii).

Claim 26 (Previously presented): A process as claimed in claim 25, which additionally comprises the step (vi):

(vi)     cooling at least part of the condensate obtained in (v) to a temperature in the range of from 10 to 30°C in at least one heat exchanger and returning this part of the cooled condensate as reflux to the distillation column used in (iii).

Claim 27 (Currently amended): A process as claimed in claim 26, ~~wherein propene compressed in the at least one heat exchanger used in (vi) is vaporized completely with depressurization~~ further comprising:

depressurizing a compressed propene stream into a compartment of the heat exchanger used in (vi), and

vaporizing the depressurized compressed propene completely;

wherein a resulting refrigeration power is transferred to the condensate present in another compartment of the heat exchanger.

Claim 28 (Currently amended): A process for preparing propylene oxide, which comprises at least the steps (iii) and (iv)

(iii) separating off propylene oxide from a mixture (M1) comprising propylene oxide and at least one solvent by distillation in a distillation column, giving a bottom stream and a vapor stream consisting essentially of propylene oxide, wherein the distillation is carried out at a pressure of less than 1.013 bar, and wherein the at least one solvent is methanol, and the methanol content of the vapor stream is not more than 500 ppm;

(iv) compressing the vapor stream obtained in (iii) by means of at least one compressor to give a compressed vapor,

which additionally comprises the steps (i) and (ii)

(i) reacting propene with hydrogen peroxide in the presence of a titanium silicalite catalyst and methanol as solvent to give a mixture (M0) comprising propylene oxide, unreacted propene and methanol;

(ii) separating off the unreacted propene from the mixture (M0) to give a mixture (M1) comprising propylene oxide and methanol,  
and the steps (v) and (vi)

(v)      condensing the vapor obtained in (iv) and returning at least part of the heat of condensation to at least one vaporizer used in the distillation column employed in (iii), and

(vi)      cooling at least part of the condensate obtained in (v) to a temperature in the range of from 10 to 30°C in at least one heat exchanger and returning this part of the cooled condensate as reflux to the distillation column used in (iii).